

3.8 Environmental Justice

U.S. Executive Order 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations) directs Federal agencies to assess whether the Proposed Action or alternatives would have disproportionately high and adverse human health or environmental effects on minority and low-income populations. The Project Area is within the Rio Chama and Rio Grande river systems, located primarily within USFS and BLM rangelands that contain small isolated residential communities. The City of Española, a low income and largely Hispanic community, is located on the Rio Grande near the confluence with the Rio Chama. Several federally recognized Indian tribes are in the general area, including the Pueblo of San Ildefonso, located on the Rio Grande in the vicinity of the Otowi gage; the Pueblo of San Juan, located at the confluence of the Rio Chama and the Rio Grande; the Pueblo of Santa Clara, located south of the Pueblo of San Juan; and the Pueblo of Cochiti, upon whose lands Cochiti Reservoir is located. Portions of the San Juan-Chama Project are located on the Nation's lands and the subcontract involves water rights of the Nation.

3.9 Indian Trust Assets

Indian Trust Assets (ITAs) are "legal interests" in assets held in trust by the Federal Government for Indian tribes or individual Indians. Examples of things that can be ITAs are lands, minerals, water rights, hunting and fishing rights, other natural resources, money, or claims. A characteristic of an ITA is that it cannot be sold, leased, or otherwise alienated without the approval of the Federal government. Secretarial Order 3175 and Reclamation ITA procedures require Reclamation to assess the impacts of its projects on identified ITAs. Reclamation, in cooperation with American Indian Tribes impacted by a given project, must inventory and evaluate assets, then mitigate or compensate for adverse impacts to the assets held in trust for Federally recognized American Indian Tribes or Indian individuals.

As noted in Section 3.7 above, several Indian tribes are located within the Project Area. However, no ITAs, other than the water rights of the Jicarilla Apache Nation that will be leased under the Proposed Action, will be involved in the Proposed Action.

CHAPTER 4. ENVIRONMENTAL CONSEQUENCES

This chapter describes environmental effects associated with the No Action and Proposed Action alternatives. The direct, indirect, and cumulative environmental consequences are described for each of the various resources. The potential impacts of the alternatives are based, in large part, on the information and data found in the Buckman Water Diversion Project DEIS (USFS, 2004). While the proposed subcontract is independent of the Buckman Water Diversion Project, the potential effects associated with the Proposed Action would similarly affect many of the same natural resources.



4.1 Direct And Indirect Effects

4.1.1 Surface Water Resources

4.1.1.1 No Action

The City would need to continue to seek other methods (e.g., other water rights) to meet its near-term water supply needs for groundwater offsets and other water uses. The No Action Alternative is not expected to substantively change how the Nation's water is stored and released in the Rio Chama system.

Flows in the Rio Grande would still continue to be regulated by the OSE and the City would need to find alternative releases of San Juan-Chama or other water for offsets pursuant to existing permit requirements, therefore, the No Action Alternative would have no effect on surface water flows.

The No Action Alternative would not affect water quality or sediment transport in the river. Likewise, neither the floodplains nor the flood potential would be affected.

4.1.1.2 Proposed Action

The Proposed Action would have no significant impacts on the flow regime. Under foreseeable operating conditions for deliveries of subcontracted water, releases would typically be made in a manner that is consistent with the existing and post 1971 operations for delivery of San Juan-Chama Project water from Heron Dam to Cochiti Reservoir as called for by the project contractors, including the City. The range of the historic operations of the project has varied from storing all or part of the water released from Heron in El Vado and/or Abiquiu reservoirs for future use by contractors including the City to concentration of releases below Abiquiu Dam in short periods (60 to 90 days typically during low flow months in the summer), depending upon specific hydrologic and operational conditions or regulatory and operational needs of the contractors.

In most years, however, release patterns for the block of water covered by the subcontract will be performed to replace calculated effects on Rio Grande flows as a result of the pumping of the Buckman Well Field (offsets). Under this scenario, it is anticipated that releases will be made throughout the year and in small amounts, typically 2 to 8 cfs, to essentially "match" the pattern of depletions resulting from the pumping of the Buckman Well Field as calculated by the OSE. Alternately, releases of subcontract water for direct diversion to meet the City's water supply need may reflect the expected pattern of higher summer and lower winter municipal water supply demand fluctuation. In either case, the Proposed Action would cause a small and generally unidentifiable component of the total river flow at downstream river gages. See Section 2.2.

Under a scenario where releases are concentrated in two months, it is anticipated that flows would increase in the Rio Chama (below Abiquiu Dam, upstream of the proposed Buckman diversion) by up to approximately 25.2 cfs for 60 days, or 5.4 percent of the

average summer flow and on the Rio Grande, flows would increase by approximately 2.3 percent of the average summer flow, if all 3,000 ac-ft were released in August and September. In the event that all or a portion of the subcontract water is stored in upstream reservoirs, it is anticipated that flows below Abiquiu Dam will be reduced accordingly. Generally, storage for future use has occurred under two scenarios: the contractors do not have a use for the water in a given year or there are substantial native flows restricting the need for regulatory offset releases. In the foreseeable future, the City will need all of its San Juan-Chama water including the subcontracted 3,000 ac-ft/yr once the proposed Buckman diversion is in place so annual storage options will diminish with time. If, on the other hand, water is stored, future releases of these supplies will increase flows in subsequent years. The stream effects of these scenarios given the small volumes of water relative to the other flows in the subject reaches in either case is *de minimis*.

The Proposed Action would not affect water rights. The Nation would enter into a 50-year term subcontract with the City for the delivery of up to 3,000 ac-ft/yr. This subcontract would not affect the Nation's ownership of the water leased through the subcontract.

The Proposed Action is not expected to have noticeable effects on surface water resources. It is anticipated that release of water under the Proposed Action would increase river flows in the Rio Chama below Abiquiu Reservoir by no more than approximately 6.5 percent of average flow, even at a maximum release schedule of two months (August and September). In months when no subcontract water is released below Abiquiu Dam, it is anticipated that water flow would be affected to the extent that the concentrated release of 25.2 cfs for 60 days would supplant the typical release pattern of an average of approximately 5.6 cfs release over about 270 days for Buckman Well Field pumping offsets.

As stated above, the effects of storage of the water (in El Vado or Abiquiu Reservoir) by the City would be *de minimis* given that the City would utilize these existing reservoirs consistent with existing reservoir management. The release of the water from Heron Dam would not be new, though the schedule for release might be altered based on the City's needs. The release of the water from storage into the Rio Chama would be incorporated with other release schedules to maximize river benefits in the same manner as historical operations by Reclamation and USACE.

The release of 3,000 ac-ft/yr from Heron Dam would not have a noticeable effect on Heron Reservoir elevation or on El Vado and Abiquiu reservoirs downstream. The total maximum release, as proposed, would account for approximately 0.7 percent of Heron Reservoir total capacity. Increases in elevation in El Vado and Abiquiu Reservoirs would be minimal and would occur only if the additional release were stored in those reservoirs and not "passed through" the reservoirs. If the release from Heron Dam were not stored in El Vado and/or Abiquiu reservoirs, the pass-through would have no impact on reservoir heights. No impacts to Cochiti Reservoir are anticipated as the quantity of water

would likely be too small to measure relative to other flows, groundwater offsets, and evaporation losses.

The subcontract waters would not change flow volumes in a manner that is distinguishable from historic operations. Therefore, water quality and sediment transport will not be affected.

Flooding and floodplain conditions would not be affected, as the river channel (because of significant historical alterations) far exceeds flow requirements during the periods when the subcontract waters would be put into the Rio Chama and Rio Grande.

4.1.2 Groundwater Resources

4.1.2.1 No Action

Under the No Action Alternative, the Buckman Well Field would continue to provide about 40 to 60 percent of the City's water supply.

The City would still be required under existing permits to offset its groundwater depletions and reductions in streamflow in the Rio Grande and its tributaries attributed to the City's groundwater pumping. Therefore, the No Action Alternative would have no effect on groundwater resources.

4.1.2.2 Proposed Action

The Proposed Action would provide additional flows to help meet the requirements described in the City's permit from the OSE to operate the Buckman wells, specifically mitigation of groundwater and surface water depletions. Groundwater diversions from Buckman wells may be reduced to the extent that the Proposed Action is used to support new direct diversions. The City currently uses a part of its existing San Juan- Chama water to offset depletions. The Proposed Action would provide 3,000 ac-ft/yr for groundwater offsets and other legal and regulatory requirements, as well as for direct diversions.

4.1.3 Biological Resources

4.1.3.1 Aquatic Communities

4.1.3.1.1 No Action

The No Action Alternative would not effect aquatic communities. If the City is not able to acquire the Nation's subcontract water, the City is still required under its existing permits to offset the effects on surface water from its ground water depletions, and therefore aquatic communities would not be affected.

4.1.3.1.2 Proposed Action

The Proposed Action would make additional water available to the City to enhance the City's ability to offset calculated depletions on the Rio Grande as a result of Buckman

Well Field pumping and to mitigate potential impacts on fish and macroinvertebrate communities within the Project Area.

No adverse impacts to aquatic communities are anticipated as a result of the Proposed Action. Increases in river flows would amount to a maximum of about 6.5 percent on the Rio Chama and about 3 percent on the Rio Grande change in average summer flow volume if the entire 3,000 ac-ft of subcontract water were released over a two-month period (the maximum release schedule anticipated by the City). Under typical operations, the 5.6 cfs average release will have negligible effects on streamflow conditions. The additional water in either case is not anticipated to measurably increase turbidity and sediment load because of its relatively low volume.

4.1.4 Riparian Resources

4.1.4.1 No Action

The No Action Alternative would not remove or modify vegetation communities within the Project Area. As a condition of approval of regulatory permits, the City is required to monitor potentially impacted riparian/wetlands every five years and mitigate for effects to riparian areas as a result of Buckman Well Field pumping.

4.1.4.2 Proposed Action

The Proposed Action would not have an adverse effect on riparian areas along the Rio Chama and Rio Grande. Additional in-stream water may be available to offset flow reductions caused by groundwater depletions.

4.1.5 Threatened and Endangered Species

4.1.5.1 No Action

Under the No Action Alternative, there would be no disturbance of or change in threatened and endangered or special status species. Given the present state and federal regulatory interests (for example, Clean Water Act (CWA), Endangered Species Act (ESA)), it is not anticipated that further degradations of river resources will be allowed.

The No Action Alternative would not guarantee the availability of the Nation's water to Reclamation to supplement flows for the silvery minnow. The Nation is not obligated to enter into further subcontracts of its water to Reclamation for this purpose.

4.1.5.2 Proposed Action

The Proposed Action would have no adverse effect on threatened and endangered species of concern within the Project Area, including the flathead chub, Rio Grande chub, and northern leopard frog. The City's use of the water may increase flows during the drier months, but in any case would be a small and generally unidentifiable component of the total river flow. See Section 4.1.1.2. The Proposed Action is not anticipated to have an impact on the Rio Grande silvery minnow because the fish is no longer found above

Cochiti Reservoir. Under typical operations, the subcontract water will be co-mingled with other flows into Cochiti Reservoir as has historically occurred, and thus would not affect flows downstream of Cochiti.

The Nation's water is not subcontracted to Reclamation for any portion of the proposed subcontract term, and the Nation is under no obligation to subcontract its water to Reclamation. Consequently, the approval of the subcontract will not constitute reallocating water that would otherwise be allocated to supplement flows for the silvery minnow.

4.1.6 Cultural Resources

4.1.6.1 No Action

The Proposed Action would involve no construction or disturbance to cultural resources and therefore would have no cumulative effect on cultural resources.

4.1.6.2 Proposed Action

The Proposed Action does not involve any construction or alteration of any facilities along the river system. Because no alteration or ground disturbance is proposed, there would be no adverse effect on cultural resources.

4.1.7 Environmental Justice

4.1.7.1 No Action

If the No Action Alternative were selected, existing water rights and related uses would remain unchanged. The Nation would lose the benefit of the subcontract, resulting in the loss of revenue from the subcontract. The lost revenue would adversely impact the Nation's on-going efforts to provide human services and economic development opportunity to its people.

4.1.7.2 Proposed Action

Although the water delivered under the subcontract will flow in the Rio Chama and the Rio Grande through the lands of various tribes and the City of Española, as explained above, there will be no significant impact on surface water flows, reservoir levels or river corridor resources.

As explained in Chapter 1, the Proposed Action is needed to allow the Nation to benefit from subcontracting its water under the Federal Contract as intended by the United States Congress. The water supply subject to the subcontract is not currently needed for on-Reservation use and the Nation does not foresee a need for its use on-Reservation within the term of the subcontract. Accordingly, the water is available for subcontracting off-Reservation. The Legislative Council of the Nation has found that the subcontract with the City is for a term and contains conditions that will ensure the ability of the Nation to retrieve all or a portion of this water supply for its purposes at the expiration of the

subcontract if the Nation determines it has alternative uses, and that the terms and conditions of this subcontract will not jeopardize the ability of the Nation to utilize all or a portion of this water supply for on-Reservation development as needed upon expiration of the subcontract.

The Nation would increase its revenue stream, providing additional funds for human services, economic opportunity, and other benefits to the Nation's people. The loss of the Nation's use of the water for the subcontract period would not have an adverse impact upon the Nation or its members because it has been determined that this block of its future use San Juan-Chama water is not needed for on-Reservation uses for the term of the subcontract agreement.

Thus, the Proposed Action will benefit the Nation and not affect other minority and low income communities.

4.1.8 Indian Trust Assets

4.1.8.1 No Action

Under the No Action alternative, the Nation would not be able to enjoy the economic benefit of the subcontract it has negotiated with the City. This would be an adverse effect on the Nation's water rights as an Indian Trust Asset. The Nation has no current use for the water under the subcontract on the Reservation. Consequently, the Nation would not realize any offsetting benefit.

No Indian Trust Assets of other tribes would be affected except to the extent that the City's continuing groundwater depletions may affect available ground water to tribes in the area of the City's pumping or may affect water flows in the Rio Grande and thereby affect surface water availability to tribes.

4.1.8.2 Proposed Action

The Proposed Action does not involve the use of any Indian Trust Assets except the Nation's water rights that are the subject of the subcontract. The Nation has the right, under the Settlement Act and the Federal Contract, to subcontract this water to third parties for beneficial use outside of the Jicarilla Apache Indian Reservation when the Nation is not using the water on the Reservation. This not an issue of a third party using Indian Trust Assets without the consent of the Tribe. Rather, the Nation has negotiated this subcontract and seeks to use its own Indian Trust Assets in order to receive the economic benefits intended by the United States Congress when it enacted the Settlement Act.

The water covered by the subcontract is surplus to the Nation's needs for the term of the subcontract. In addition, the Legislative Council of the Nation has found that the subcontract with the City is for a term and contains conditions that will ensure the ability of the Nation to retrieve all or a portion of this water supply for its purposes at the



expiration of the subcontract if the Nation determines it has alternative uses. The Legislative Council has further determined that the terms and conditions of this subcontract will not jeopardize the ability of the Nation to utilize all or a portion of this water supply for on-Reservation development as needed upon expiration of the subcontract.

Thus, the Proposed Action would not have any adverse effect on the Nation's use and enjoyment of its water right, the Indian Trust Asset of concern. Moreover, the Proposed Action will have a positive benefit by facilitating the Nation's use of its Indian Trust Asset for an economic return to the Nation.

Although as noted in Section 3.7 the Project Area is within and near lands of other Indian tribes, the Proposed Action will not affect the Indian Trust Assets of any other tribe. The Proposed Action will not affect any riparian areas along the Rio Chama and the Rio Grande, and thus will not affect the riparian lands of other tribes. The Proposed Action does not involve construction or alteration of facilities along the river system, and therefore will not disturb or effect cultural resources of any tribe. The Proposed Action will not affect any water rights, including the water rights of any tribe. Water levels in Cochiti Reservoir would not be affected.

4.2 Cumulative Effects

4.2.1 General Considerations for Cumulative Effects

Discussions of cumulative effects for each resource are provided below. The Council of Environmental Quality (CEQ) regulations implementing the procedural provisions of the National Environmental Policy Act (NEPA) define cumulative effects as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such actions" (40 Code of Federal Regulations Part 1508.7). The regulations also state that "cumulative effects can result from individually minor but collectively significant actions taking place over a period of time." The cumulative effects analysis presented in each resource section is based on the effects of the No Action Alternative, and potential effects of the Proposed Action, added to past, present, and reasonably foreseeable future actions and their effects in the areas of influence for each resource category.

4.2.1.1 Past and Present Projects

The past and present projects that have most noticeably changed the characteristics of the Rio Chama and Rio Grande and river resources in the Project Area include the following:

- El Vado Dam and Reservoir were constructed on the Rio Chama in 1934-35. They are part of the Middle Rio Grande Project and are operated by Reclamation. Angostura Diversion Dam, Isleta Diversion, and San Acacia Diversion Dam are also

components of the Middle Rio Grande Project located downstream from Cochiti Dam.

- Congress authorized the San Juan-Chama Project in 1962 under PL87-483, Colorado River Storage Project Act of April 11, 1956. The San Juan-Chama Project consists of facilities that divert an average of 110,000 acre-feet per year of water from the San Juan Basin (part of the Colorado River Basin) in southern Colorado through 26 miles of tunnels beneath the Continental Divide to Willow Creek, a tributary of the Rio Chama in the Rio Grande Basin, in New Mexico.
- The U. S. Army Corps of Engineers completed construction of Abiquiu Dam and Reservoir in 1963 and Cochiti Dam in 1970. Both dams influence the characteristics of the Rio Grande in the vicinity of the City.
- The City's Buckman Well Field consists of an original eight wells constructed in the 1970s, and five others that were added during 2003.

4.2.1.2 Future Projects

Several examples of foreseeable future projects include the following:

- The City of Albuquerque proposes a diversion of 94,000 ac-ft/yr in order to fully consume its 47,000 ac-ft/yr of San Juan-Chama water and return 47,000 ac-ft/yr to the Rio Grande as treated effluent from its wastewater treatment process.
- The City of Española proposes a drinking water project that includes the diversion of 1,000 ac-ft/yr of San Juan-Chama water and approximately 1,000 ac-ft/yr of native water. San Juan-Chama water would be consumed and the native water would re-enter the Rio Grande at the wastewater treatment plant effluent outfall. Preparation of an environmental assessment is currently underway.
- Los Alamos County is conducting feasibility studies to determine if it can divert its 1,200 ac-ft/yr of San Juan-Chama water directly from the Rio Grande.
- The Pueblo of San Ildefonso is considering diverting a portion of its Rio Grande water rights from the river. San Ildefonso installed a single unit infiltration collector well as a pilot project in 2001.
- There is an ongoing cooperative effort between several agencies to identify, fund, implement, and monitor river restoration activities in and around this Project Area.
- Other projects may be undertaken for habitat improvements on the Rio Chama and Rio Grande for the silvery minnow, the southwestern willow flycatcher and other native species.
- The City of Santa Fe and Santa Fe County are establishing relationships with other entities responsible for the use and management of the surface water resources of the region and are active participants in workgroups and restoration activities (both planned and ongoing).



- Future changes in the Rio Grande and tributaries could also result from litigation settlement agreements, collaborative programs, and future legislation. These may include a settlement on the *Aamodt* litigation that could potentially result in the development of a Regional Water System to serve the Pojoaque Basin tributary to the Rio Grande above the Otowi gage, including development of future water rights in accordance with negotiated conditions.
- The City of Santa Fe, Santa Fe County, and Las Campanas propose construction of the Buckman Water Diversion Project, which would divert water for those entities' municipal needs. The majority of the water diverted would be the City and County's existing San Juan Chama contract allocation. A final environmental impact statement (EIS) for the Buckman Water Diversion Project is pending the lead federal agencies' changes of the draft EIS in response to public comments. The public comment period closed in February 2005.

4.2.2 Surface Water Resources

4.2.2.1 No Action

Under the No Action Alternative, the City would need to continue to seek other methods (e.g., other water rights) to meet its near-term water supply needs for groundwater offsets and other water uses. Flows in the Rio Grande would continue to be regulated by the OSE and the City would need to find alternative releases of San Juan-Chama or other water for offsets. Therefore, the No Action Alternative, taken together with past, present and future actions, would have no cumulative effect on surface water resources.

4.2.2.2 Proposed Action

Under the Proposed Action, releases of the subcontracted water from Heron Dam could have some effect on flows and on storage in the three reservoirs on the Rio Chama, but these effects would be minor and difficult to measure. Releases are expected to be integrated with other City, Reclamation, and other contractor releases of San Juan-Chama water as may be deemed beneficial for recreational, ecological, or other purposes, as such releases have been historically beneficial. The schedule for releases of San Juan-Chama water would be determined through a process involving the City, OSE, and Reclamation. Reclamation would maintain operational discretion to balance the timing of contractor deliveries with the other recreational and ecological objectives within the Wild and Scenic Reach between El Vado Dam and Abiquiu Reservoir.

The cumulative effect of the subcontract water on storage in the reservoirs would be minimal. Abiquiu Reservoir has a capacity of greater than 1.5 million ac-ft with almost 200,000 ac-ft available for storage of San Juan-Chama water. On a reservoir of this size, variations in storage over the course of a year of 5,605 ac-ft (i.e., the City and County's combined San Juan-Chama project annual water allocation) would affect the surface elevation by less than an inch (USFS, 2004).



The water that would be subcontracted through the Proposed Action would be commingled with much larger (of an order of magnitude) native flows making the addition essentially undetectable in these river reaches. Because this water would be used to offset pumping depletions or diverted for drinking water supply, it is anticipated that none of this water would reach Cochiti Reservoir on an annual net basis.

No effect on flows below Cochiti Dam would be expected. San Juan-Chama releases for offset purposes are managed to keep the Rio Grande conditions below the Otowi gage whole, including volume losses to the 3,000 ac-ft/yr, both natural (transpiration, evapotranspiration, etc) and by diversions (agriculture, etc.). Cumulative effects with projects in the Albuquerque area, including the Albuquerque diversion project, if all flows were released at the same time, are not anticipated because the river segments are separated by Cochiti Reservoir.

4.2.3 Groundwater Resources

4.2.3.1 No Action

Under the No Action Alternative, the Buckman Well Field would continue to provide about 40 to 60 percent of the City's water supply, however, the cumulative effects of groundwater depletions and reductions in streamflow in the Rio Grande and its tributaries attributed to the City would continue to require current mitigation (offsets) to satisfy OSE requirements.

If other proposed projects are constructed affecting groundwater depletions and associated stream depletions, such as the Buckman Water Diversion Project, the rate at which these groundwater depletions occur could be affected, constituting a cumulative effect. If the Buckman Water Diversion Project were constructed, pumping at the Buckman Well Field would probably be reduced on an average annual basis. This would have a beneficial impact on groundwater in the area, although surface water residual offsets would still be required to offset the continuing effects of historic pumping and reduced future pumping.

To the extent that future wells are proposed, the OSE will require appropriate mitigation for surface and groundwater protection. Therefore, no cumulative effects have been identified.

4.2.3.2 Proposed Action

The Proposed Action would provide additional flows to help meet the requirements from the OSE to operate the Buckman wells, specifically mitigating groundwater and surface water depletions, thereby causing no adverse cumulative effect on groundwater resources.



4.2.4 Biological Resources

4.2.4.1 Aquatic Communities

4.2.4.2 No Action

No Action Alternative would not effect aquatic communities, causing no cumulative effect. If the City is not able to acquire the Nation's subcontract water, the City is still required under its existing permits to offset the effects on surface water from its ground water depletions.

4.2.4.3 Proposed Action

The Proposed Action would not significantly change existing conditions for aquatic species above Cochiti Reservoir and therefore, would not have adverse cumulative effects. Other proposed water diversion projects, for agriculture or municipal uses will also be required to offset direct effects to keep flows whole at the Otowi gage with state and federal regulatory controls (for example, CWA, ESA) likely restricting such potential future degradations.

4.2.5 Riparian Resources

4.2.5.1 No Action

The No Action Alternative would not remove or modify vegetation communities within the Project Area. As a condition of approval of regulatory permits, the City is required to monitor potentially impacted riparian/wetlands every five years and mitigate for effects to riparian areas as a result of Buckman Well Field pumping. Therefore, the No Action Alternative, taken together with past, present and future actions, would have no cumulative effect on surface water resources.

4.2.5.2 Proposed Action

Under the Proposed Action, riparian habitat would not be negatively impacted along the Rio Chama and Rio Grande, given that the Proposed Action is consistent with existing operating conditions.

4.2.6 Threatened and Endangered Species

4.2.6.1 No Action

Under the No Action Alternative, there would be no disturbance of or change in threatened and endangered or special status species. Other proposed water diversion projects, for agriculture or municipal uses will also be required to offset direct effects to keep flows whole at the Otowi gage with state and federal regulatory controls (for example, CWA, ESA) likely restricting such potential future degradations. Therefore, there would be no cumulative adverse effect

4.2.6.2 Proposed Action

The Proposed Action will not significantly change river flows or riparian conditions within the Project Area and will, therefore, not have an adverse effect on threatened and endangered and special status species. Other proposed projects would be required to keep flow conditions at the Otowi gage whole with state and federal regulatory controls (for example, CWA, ESA) likely restricting such potential future degradations.

4.2.7 Cultural Resources

4.2.7.1 No Action

The Proposed Action would involve no construction or disturbance to cultural resources and therefore would have no cumulative effect on cultural resources.

4.2.7.2 Proposed Action

The Proposed Action does not involve any construction or alteration of any facilities along the river system. Because no alteration or ground disturbance is proposed, there would be no adverse effect on cultural resources.

4.2.8 Environmental Justice

4.2.8.1 No Action

Under the No Action Alternative, existing water rights and related uses would remain unchanged. The Nation would lose the benefit of the subcontract, resulting in the loss of revenue from the subcontract. The lost revenue would adversely impact the Nation's on-going efforts to provide human services and economic development opportunity to its people, thereby causing an adverse cumulative effect.

4.2.8.2 Proposed Action

No adverse environmental justice cumulative effects are expected because of the Proposed Action.

4.2.9 Indian Trust Assets

4.2.9.1 No Action

Under the No Action alternative, the Nation would not be able to enjoy the economic benefit of the subcontract it has negotiated with the City. This would have an adverse effect on the Nation's water rights as an Indian Trust Asset. The Nation has no current use for the water under the subcontract on the Reservation. Consequently, the Nation would not realize any current and future offsetting benefit.

No Indian Trust Assets of other tribes would be affected. To the extent that the City's continuing groundwater depletions, together with other groundwater depletions in the region, may cumulatively affect available ground water to tribes in the area of the City's



pumping or may affect water flows in the Rio Grande, offsets would be required and therefore there would be no cumulative effect.

4.2.9.2 Proposed Action

As explained above, the Proposed Action does not involve the use of any Indian Trust Assets except the Nation's water rights that are the subject of the subcontract. The water covered by the subcontract is surplus to the Nation's current needs for the term of the subcontract.

Thus, the Proposed Action does not have a cumulative adverse effect on the Nation's use and enjoyment of its water right, the Indian Trust Asset of concern. In fact, the Proposed Action will have a positive cumulative effect by facilitating the Nation's use of its Indian Trust Asset for an economic return to the Nation.

Although as noted in Section 3.7 the Project Area is within and near lands of other Indian tribes, the Proposed Action, considered together with other river operations and water uses, will not have a cumulative effect the Indian Trust Assets of any other tribe. The Proposed Action will not affect any riparian areas along the Rio Chama and the Rio Grande, and thus will not affect the riparian lands of other tribes. The Proposed Action does not involve construction or alteration of facilities along the river system, and therefore will not disturb or effect cultural resources of any tribe. The Proposed Action will not affect any water rights, including the water rights of any tribe. Water levels in Cochiti Reservoir would not be affected.

4.3 Unavoidable Adverse Effects

Unavoidable adverse effects are environmental consequences of an action that cannot be avoided either by changing the nature of the action or through mitigation if the action is undertaken.

The change in the targeted use of the Nation's 3,000 ac-ft/yr of San Juan- Chama water would not have any unavoidable adverse effects because the water subcontracted from the Nation is surplus to their needs during the term of the subcontract and the amount to be released (3,000 ac-ft/yr) is expected to have no adverse impacts to surface water, groundwater, cultural, or biological resources.

4.4 Irreversible and Irretrievable Commitment of Resources

Irreversible commitments are those that cannot be reversed except in the extreme long-term. Irretrievable commitments of resources are expenditures or consumption of resources that cannot be reversed or restored.

The Proposed Action would not constitute an irreversible commitment of resources. The rights to the water remain the Nation's rights. At the end of the subcontract, the Nation may use the water or subcontract it again as it sees fit. The release of 3,000 ac-ft/yr of



water from Heron Reservoir for the City's use would not constitute an irretrievable commitment of resources because the water will be annually replenished through natural hydrological processes.

CHAPTER 5. MITIGATION MEASURES

No adverse impacts that would warrant mitigation have been identified, therefore no mitigation measures are proposed.

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